

Claims

The following list of claims replaces all prior listings of claims. Please note that claims 67 and 68 have been amended, and claims 69 and 70 have been added. No claims have been canceled.

1. (Previously Presented) A packaged dough product comprising a low pressure container having therein at least two individual portions of a chemically leavened dough product, wherein each portion comprises an encapsulated basic active ingredient, a non-encapsulated acidic active ingredient, and a barrier material, wherein

at below baking temperature the barrier material encapsulates the basic active ingredient and separates the basic active ingredient from the non-encapsulated acidic active ingredient to inhibit reaction of basic active ingredient and acidic active ingredient,

the non-encapsulated acidic active ingredient is selected to have a solubility of greater than 35 kcal/mole in the dough composition below baking temperature and to be substantially soluble in the bulk dough composition during baking,

the barrier material degrades at or above the baking temperature to allow the basic active ingredient and the acidic active ingredient to come into contact in the dough composition and react to substantially leaven the dough composition during baking.

2. (Cancelled)

3. (Previously Presented) The packaged dough product of claim 1 wherein the dough composition contains from about 0.25 to about 2 wt% basic active ingredient encapsulated in the barrier material, and an amount of acidic active ingredient to neutralize the encapsulated basic active ingredient.

4-7. (Cancelled)

8. (Previously Presented) The packaged dough product of claim 1 wherein the acidic active ingredient is sodium aluminum phosphate.

9. (Cancelled)

10. (Previously Presented) The packaged dough product of claim 1 wherein the basic active ingredient is soluble in a water phase of the dough composition at one or more of a processing or refrigeration storage temperature.

11. (Previously Presented) The packaged dough product of claim 1 wherein the basic active ingredient is chosen from the group consisting of sodium bicarbonate, potassium bicarbonate, ammonium bicarbonate, and combinations thereof.

12. (Previously Presented) The packaged dough product of claim 1 wherein the barrier material has a melting temperature of at least 90°F.

13. (Previously Presented) The packaged dough product of claim 12 wherein the barrier material comprises a fat-type barrier material selected from the group consisting of palm oil, palm kernel oil, canola oil, a synthetic analog of palm kernel oil or canola oil, and combinations thereof.

14. (Canceled)

15. (Previously Presented) The packaged dough product of claim 1 wherein the encapsulated particles have an average size in the range from about 100 to about 420 microns.

16. (Previously Presented) The packaged dough product of claim 1 wherein the basic active ingredient is sodium bicarbonate.

17-19. (Cancelled)

20. (Previously Presented) The packaged dough product of claim 1 comprising encapsulated particles comprising basic active ingredient particulates coated by barrier material, and further comprising encapsulated particles comprising acidic active ingredient particulates coated by barrier material.

21. (Canceled)

22. (Previously Presented) The packaged dough product of claim 20 wherein the barrier materials are the same or different, and each independently has a melting point in the range from about 90°F to about 160°F.

23. (Previously Presented) The packaged dough product of claim 20 wherein the barrier materials are the same or different and independently comprise a vegetable oil chosen from the group consisting of palm kernel oil, canola oil, a synthetic analog of palm oil, palm kernel oil or canola oil, and combinations thereof.

24. (Cancelled)

25. (Previously Presented) The packaged dough product of claim 20 wherein the acidic active ingredient is selected from the group consisting of sodium aluminum phosphate, sodium aluminum sulfate, sodium acid pyrophosphate, monosodium phosphate, monocalcium phosphate monohydrate, anhydrous monocalcium phosphate, dicalcium phosphate dihydrate, and mixtures thereof.

26. (Previously Presented) The packaged dough product of claim 20 wherein the acidic active ingredient is selected from the group consisting of sodium aluminum phosphate, sodium acid pyrophosphate, and mixtures thereof.

27-35. (Cancelled)

36. (Previously Presented) The packaged dough product of claim 1 wherein
the basic active ingredient is encapsulated by a barrier material having a
solid fat index of at least about 50% at 75°F,
the acidic active ingredient is not encapsulated.

37-42. (Cancelled)

43. (Previously Presented) The packaged dough product of claim 1, wherein the dough
composition is refrigeration stable such that no more than 0.46 cubic centimeters per
gram of carbon dioxide is released from the dough composition over a twelve week
period of storage at about 45°F.

44-58. (Cancelled)

59. (Previously Presented) The packaged dough product of claim 1, wherein the
encapsulated basic active ingredient has an activity in the range from about 60 percent to
about 70 percent.

60. (Original) The packaged dough product of claim 1 wherein the non-pressurized
container comprises a pouch or cup.

61. (Original) The packaged dough product of claim 1 wherein the dough composition
has a raw specific volume in the range from about 1.0 to about 1.6 cubic centimeters per
gram, and the dough composition can be baked to a specific volume of at least about 2.0
cubic centimeters per gram.

62. (Original) The packaged dough product of claim 1 wherein the encapsulated basic active ingredient has an activity in the range from about 55 percent to about 70 percent.

63. (Previously Presented) The packaged dough product of claim 1 wherein the dough composition, when stored at refrigerator conditions for a time-period of at least 12 weeks, experiences less than 35 percent expansion during a time period beginning upon completion of the dough composition preparation and continuing through packaging and refrigerated storage.

64. (Previously Presented) The packaged dough product of claim 1 wherein the container is non-pressurized.

65. (Previously Presented) The packaged dough product of claim 1 having no pressure release upon opening.

66. (Previously Presented) The packaged dough product of claim 1 further comprising an outer non-pressurized package.

67. (Currently Amended) The packaged dough product of claim ~~60~~ 1 wherein the ~~non-pressurized~~ low pressure container further comprises a headspace therein, the headspace comprising at least a partial vacuum at least one cup.

68. (Currently Amended) The packaged dough product of claim ~~4~~ 67 wherein the ~~container~~ headspace has less than 0.20 micromoles of O₂ per square centimeter of dough surface area ~~is subdivided into a discrete pouch or cup for each individual portion.~~

69. (New) The packaged container of claim 68 wherein the headspace is of sufficient volume to accommodate outgassing of the dough product during refrigerated storage without noticeable change in the container appearance.

70. (New) The packaged dough product of claim 68 wherein the headspace has been purged with N₂.

Status of the Claims

Claims 1, 3, 8, 10-13, 15, 16, 20, 22, 23, 25, 26, 36, 43, and 59-68 were previously presented. Claims 67 and 68 have been amended. Claims 69 and 70 have been added. After amendment, claims 1, 3, 8, 10-13, 15, 16, 20, 22, 23, 25, 26, 36, 43, 59-70 are pending in the application.

The Amendments

Claim 67 has been amended to delete reference to “at least one cup”. Claim 67 has further been amended to add reference to a headspace that comprises an at least partial vacuum.

Claim 68 has been amended to delete reference the container being “subdivided into a discrete cup or pouch for each individual portion”. Claim 68 has further been amended to state that the headspace contains less than 0.20 micromoles of O₂ per square centimeter of dough surface area.

Support for the amendments to claims 67 and 68 may be found, for example, at page 25, lines 8-22.

Claim 69 has been added. This new claim recites that the headspace has a volume that is sufficient to accommodate outgassing of the dough product during refrigerated storage without noticeable change in the container appearance.

Claim 70 has been added. This new claim recites that the headspace in the container has been purged with N₂.

Support for new claim 69 may be found, for example, at page 25, lines 10-16. Support for new claim 70 may be found, for example, at page 28, lines 4-5.

The Rejections

Claims 66, 67, and 68 have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Claims 1, 3, 8, 10-13, 15, 16, 20, 22-23, 25-26, 36, 43, 59, 60-65, and 67 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Narayanaswamy et al.

(U.S. 6,261,613) in view of Ray et al. (U.S. 6,004,595) and Gulstad et al. (U.S. 3,767,421).

Claim 66 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Narayanaswamy et al. in view of Ray et al. and Gulstad et al. as applied to claims 1, 3, 8, 10-13, 15, 16, 20, 22-23, 25-26, 36, 43, 59, 60-65, and 67, above, and further in view of Schaible et al. (U.S. 6,365,210).

Claim 68 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Narayanaswamy et al. in view of Ray et al. and Gulstad et al. as applied to claims 1, 3, 8, 10-13, 15, 16, 20, 22-23, 25-26, 36, 43, 59, 60-65, and 67, above, and further in view of Drummond et al. (U.S. 5,366,744).

Remarks

The present invention claims a packaged dough product that has at least two individual (i.e., discrete) portions of a chemically leavened dough product in a low pressure (preferably non-pressurized) container. The dough composition employed in the present invention inhibits leavening or expansion during processing and refrigerated storage and eliminates the use of pressurized packaging. This inhibition is achieved through the use of **an encapsulated** basic active ingredient and **a non-encapsulated** acidic active ingredient. The acidic active ingredient has a relatively low solubility in the dough below baking temperature. However, the acidic ingredient is substantially soluble in the dough at baking temperature. It is surprising, and unexpected, that this combination of features works because even though the acidic active ingredient has a relatively low solubility in the dough at temperatures below baking temperatures, **it is substantially soluble in the dough at baking temperatures**. As previously noted by Applicant, conventional wisdom would lead one to the **opposite** conclusion. That is, conventional wisdom would lead one to conclude that an acidic active ingredient that has a relatively low solubility in the dough at below baking temperature **would also be relatively insoluble in the dough at baking temperature**.

The Rejection of Claims 66, 67, and 68 Under 35 USC 112.

Applicant traverses the rejection of claim 66. The present specification provides support for this claim at page 4, line 31 through page 5, line 3. This clearly supports the “package in a package” concept of this claim. As a result, Applicant requests withdrawal of this rejection.

Applicant submits that the rejections of claims 67 and 68 have been rendered moot by the amendments to these claims. Therefore, they also request withdrawal of the rejection of these claims.

The Rejection of Claims 1, 3, 8, 10-13, 15, 16, 20, 22-23, 25-26, 36, 43, 59, 60-65, and 67 Under 35 U.S.C. 103.

The Examiner has maintained the previous rejection of these claims, essentially without change. The Examiner has stated that the Narayanaswamy and Gulstad references disclose the same leavening acid as is required by the present invention and that Gulstad further discloses that some leavening acids are slower than others. The Examiner concludes that it would be obvious to select the slower acting leavening agent from the group disclosed in Narayanaswamy when desiring a slower acting leavening agent.

Applicant again traverses this reasoning, reiterates the arguments made in his previous responses in this Application with regard to this rejection, and submits the following additional comments.

None of the cited references suggest that one should ever use a “slower acting” leavening agent in place of any other leavening agent in order to provide the packaged dough product of the invention. As noted previously, both Narayanaswamy and Gulstad teach that there is nothing critical about the acidic ingredient to be used. Thus, neither reference provides any reason to select the acidic ingredient required by the present claims **to the exclusion of other acidic ingredients.**

The Examiner, however, continues to argue to the contrary and insists that, knowing that one wants to use a “slower acting” acidic ingredient, one would naturally select a slower acting acidic ingredient. This begs the question, even if one wanted to use a slower acting acidic ingredient, why one would select the specific acidic ingredient

having the solubility characteristics required by the claims over all of the slower acting acidic ingredients that do not have those solubility characteristics.

Applicant submits that the answer to this question is that one would not know why because to select such an acidic ingredient would be counter intuitive. Rather, one of skill in the art would conclude that an acidic active ingredient that has a relatively low solubility in the dough at below baking temperature **would also be relatively insoluble in the dough at baking temperature.** As a result, one would not be led to select the specific acidic ingredients required by the present invention.

The Rejection of Claim 66 under 35 U.S.C. 103

The Examiner has maintained her previous rejection of this claim, essentially without change. Applicant again traverses this reasoning and reiterates the arguments they have made in their previous responses in this Application with regard to this rejection.

The Rejection of Claim 68 Under 35 U.S.C. 103

Applicant submits that the Examiner's present rejection of this claim over Naranaswamy et al. in view of Ray et al. and Gulstad et al. further in view of Drummond et al. has been rendered moot in view of the above amendments.

Amended claim 68 requires that the packaged dough product have a non-pressurized container that comprises a headspace. It further requires that the headspace have a partial vacuum in it. This concept is neither taught nor suggested by any of the cited references. Moreover, the Drummond reference teaches away from the use of at least a partial vacuum. See column 4, lines 60-63 of Drummond which states:

“It has been determined that evacuation of the headspace gas by vacuum is not a suitable method for extracting the ambient air surrounding the dough product.”

This passage clearly teaches that a vacuum in the headspace is to be avoided. Accordingly, it is submitted that claims 68 is clearly patentable over the cited combination of references references.

New Claims 69 and 70

Claim 69 is dependant from claim 68 and adds the limitation that the headspace in the container has a volume that is sufficient to accommodate outgassing of the dough product that occurs during refrigerated storage without a noticeable change in the container appearance. Claim 70 is also dependant from claim 68 and adds the limitation that the headspace of the container the headspace has been purged with N₂.

Each of these claims incorporates the limitations of claim 68 regarding the headspace. As a result, claims 69 and 70 are patentable over the cited references for this reason alone.

Additionally, none of the references teach or suggest that the headspace should be of a volume adequate to accommodate outgassing of the dough at refrigerated storage without noticeable change in the container appearance. As a result, claim 69 is patentable over the cited references for this additional reason.

Finally, none of the cited references teach or suggest that the headspace can or should be purged with nitrogen. Moreover, Drummond teaches away from doing this at column 4, line 65 through column 5, line 5. This passage clearly teaches that a nitrogen purge, that is the removal of all other gasses from the headspace, is deleterious to the process. Accordingly, claim 70 is patentable over the cited references for this additional reason.

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that the claims of the above-identified application are now in condition for allowance. Reconsideration of the rejections and favorable action are requested. The Examiner is